body; the data are only strong enough to render a comparison justifiable.

It is interesting to note that the clinical history of this case, and in fact of acute leukæmia in general, is similar to many of the symptoms and signs caused by invasion of the human organism by the L-D body:[1] weakness, anæmia, hemorrhages from the gums and mucous membranes, petechiæ, enlargement of the spleen, irregular fever, percentage increase of the large mononuclears, fatal issue.

In spite of the fact that the data observed do not permit a definite interpretation, it seems to me that they are interesting enough to warrant publication. Future observations will surely clear up these points.

It is a pleasure to express my sincere thanks to Dr. Osler for permission to report these findings, and to Dr. S. J. Meltzer for continued kindly criticism and valuable suggestions.

TERATOMA OF THE THYROID GLAND.

By Isabella C. Herb, M.D.,
PATHOLOGIST TO ST. MARY'S HOSPITAL, OSHKOSH, WIS.

(From Prof. Chiari's Pathological Anatomical Institute in Prague.)

Judging by the literature, teratoma of the thyroid gland is of infrequent occurrence, the latest publication being that of Poult, July, 1905, in which he describes in detail such a growth, and gives abstracts of five other reported cases. To these may be added the case of Schneider, who published in 1903 a congenital cystadenoma of the thyroid gland in which he found cartilage, bone, smooth muscle fibres, thyroid follicles, and glands lined by cylindrical, cuboidal, and pavement epithelium. More instances of teratoma situated in the region of the neck are reported, but as these are not especially associated with the thyroid gland, no further consideration will be given them. Through Prof. Chiari, I have the pleasure of recording a new case of teratoma, undoubtly connected with the thyroid gland.

In the Kaiser Franz Joseph Children's Hospital, Prague, June 14, 1905, Prof. Chiari made a postmortem on an infant, from whose record I abstract the following:

Clinical History. Gustave H., born June 9, 1905, is the fourth child of healthy parents. On account of a tumor of the neck, he was immediately admitted to the surgical department of Prof.

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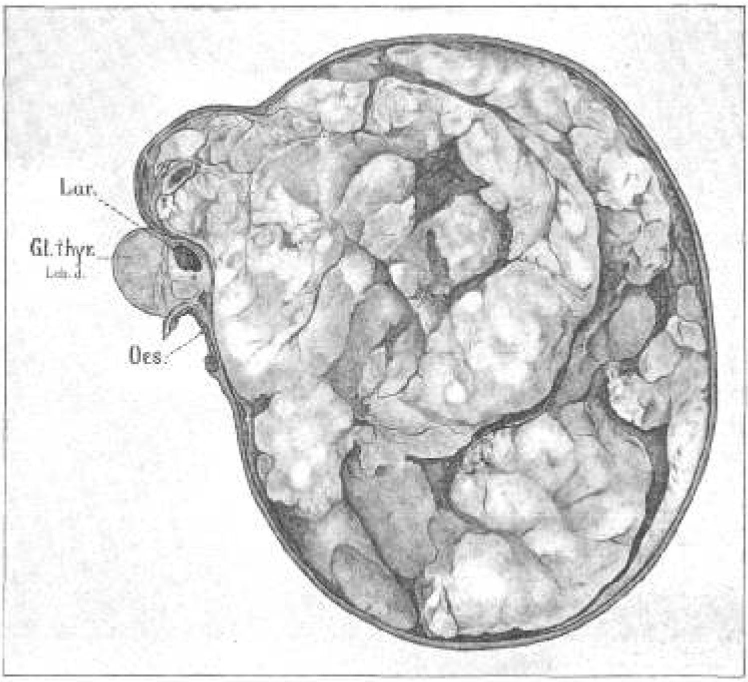
[1] Bentley, Brit. Med. Journal, September 20, 1902, p. 872 (written before the true etiology of Kala Azar was known; Donovan, Brit. Med. Journal, November 28, 1903, p. 1401.

Bayer, in this Hospital. As the child developed symptoms of gastritis no surgical treatment could be undertaken. Death occurred June 13, 1905.[1]

Postmortem Record (thirteen hours after death). Body, 50 cm. long. A large cystic tumor occupies the left submaxillary region, extending from the parotid to the clavicle, and beyond the middle line of the neck. The greatest diameter from side to side is 10 cm.; from upper to lower border 8 cm.; the greatest horizontal circumference being 19 cm. The left ear lobe is pushed upward. The skin is freely movable over the tumor. Platysma more than normally developed and spread over the growth. The sternocleidomastoid muscle is distorted to the left of the mass. The thymus and right lobe of the thyroid are normal. The veins over the tumor are prominent. The trachea is pushed out of position but not compressed. The mucous membrane of the pharynx is hyperæmic. Nothing abnormal is otherwise found except congestion, and

FIG. 1



Lar., larynx. Œs., œsophagus. Gl. thyr. Lob. d., the normal right lobe of the thyroid.

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[1] I am indebted to Prof. Wm. Bayer for the privilege of using these clinical notes.

ecchymosis. Pathological anatomical diagnosis: "struma neoplastica glandulæ congenita; gastritis catarrhalis acuta."

The tumor, which was semisolid, was, with the organs of the neck, upon its removal immediately placed in 10 per cent. watery formalin solution, in which it remained for two days, to harden sufficiently to allow cutting without disturbing its relations. A median horizontal incision was made through the entire mass, disclosing in place of the left lobe of the thyroid a grayish-white substance not unlike brain tissue in appearance, the whole being lobulated and enclosed in a firm, dense capsule, under which occasional fresh hemorrhages have occurred. To all appearances the tumor is composed of the same tissue throughout.

See the adjacent figure, showing the cut surface of the tumor from below, which is preserved in the museum of the children's hospital under No. 851 (Fig. 1).

Horizontal disks were taken from the centre, superior and inferior ends of the tumor, and after sketching, examined topographically. The sections were hardened according to Orth in Müller formol, embedded in celloidin and stained by various methods. Generally speaking, the microscopic findings verify the macroscopic appearance. This is especially true of the tumor mass, which is quite uniform in its structure except directly beneath the capsule. The capsule is composed of broad bands of connective tissue fibres, in which are large bloodvessels, bundles of nerve fibres, striated muscle fibres, thyroid follicles, and other gland formations. Everywhere connective-tissue septi extend from the capsule into the tumor tissue for a short distance, carrying with them some of the abovementioned structures. No areas of degeneration were found either in the capsule or tumor proper. The vessels are engorged with blood, the larger ones showing arterial and venous structure.

Embedded in the capsule, in the short connective-tissue septi or directly in the tumor mass, are microscopic cysts with membrana propria and surrounded by connective-tissue fibres. These cysts are lined by various kinds of epithelium. Cylindrical, ciliated (Fig. 8), goblet (Fig. 7), and cuboidal cells are found. Occasionally the same cyst is lined by cylindrical and cuboidal epithelium for a longer or shorter distance. The high cylindrical cells are four or five times higher than wide, have a very fine granular protoplasm, and a coarse granular mucleus. The nucleus is elongated, centrally placed with its long axis parallel with the long axis of the cell, or it is situated at the base of the cell and horseshoe-shaped. The cuboidal cells have a darkly staining nucleus centrally located. Goblet cells are present in both high and low cylindrical cells. Ciliated cells are high with distinct cilia. The nucleus is round, finely granular and centrally placed. Many cysts contain a homogeneous substance which is retracted from the wall, and takes a light-blue stain with hæmatoxylin eosin; others contain detached epithelium, lymphocytes, polynuclear leukocytes, and red blood cells, while others appear devoid of contents. Thyroid follicles are situated in the capsule or directly beneath it in the tumor tissue. They appear either as isolated follicles, several together, or in rows or strands. Many are filled with colloid, others are so compressed that the cell boundaries come in contact.

The ground substance of the tumor takes an exceedingly light stain (pink with hæmatoxylin eosin and yellow with Van Gieson), and is, therefore, difficult to distinguish; however, high magnification shows a fine meshwork of fibres running in all directions. The fibres for the greater part are very delicate, but occasionally coarser, more deeply staining ones are seen which run in a parallel direction. No branching or variation in the diameter was noted.

Embedded without order in this reticulum are cells of various sizes and shapes. No cell membrane could be found. A few cells are surrounded by a clear zone (Fig. 1). The nuclei are mostly round, the smaller chromatin richer nuclei taking a deeper stain. In the larger, coarser nuclei the chromatin is in very fine granules. The granules appear evenly distributed throughout the nucleus, or occasionally at the periphery. Cells with protoplasmic prolongations are present. The number vary in different fields, some showing many, others few. Masses of deeply staining cells, which are sharply differentiated from the surrounding tissue, are noted. These masses are usually irregular in outline, and near to them are cavities lined with an epithelium suggesting neuroepithelium (Fig. 2). Beautiful papillary excrescences extend in clefts or channel-like cavities. They are composed of loose connective tissue and small bloodvessels, and are clothed by a single layer of cuboidal epithelium with granular protoplasm. The nuclei are either at the base of the cell or centrally located. These formations closely resemble plexus choroideus (Fig. 3). In one place is a space or channel in which only one very small growth extends and is quite analogous to the above-mentioned larger ones (Fig. 4). In some of the connective-tissue septi are irregular masses of epidermal-like cells, which resemble here and there sebaceous cells (Fig. 5).

The tumor throughout is very vascular. The vessels in the ground substance are thin walled, many showing only an endothelial coat. Fresh hemorrhagic areas are frequently seen.

From the foregoing it is possible to say that the tumor contains the following tissues:

Ectodermal. Fetal central nervous tissue with central channel-like formations, and plexus choroideus and epidermal formations.

Endodermal. Mucus-producing glands and cavities with ciliated epithelium. Thyroid follicles.

Mesodermal. Connective-tissue fibres, elastic fibres and bloodvessels.

Upon these pathological findings we base the diagnosis of tera-

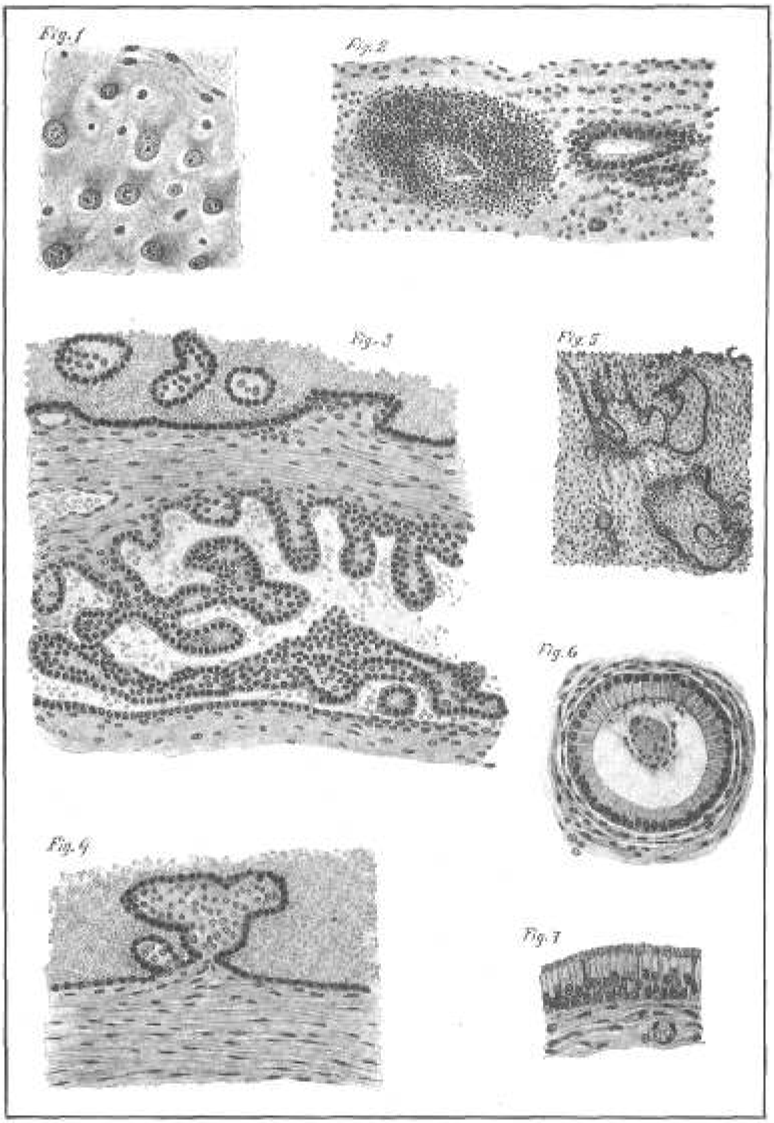

FIG. 1.—Area from the ground substance, showing protoplasmic prolongations.
FIG. 2.—Masses of cells and cavities resembling neuroepithelium.
FIG. 3.—Plexus choroideus-like formations.
FIG. 4.—Small plexus choroideus-like formations extending in a channel or cleft.
FIG. 5.—Epidermal formations.
FIG. 6.—Mucous cyst.
FIG. 7.—Cyst with high ciliated epithelium.

toma of the thyroid gland. Of greatest importance is the large quantity of fetal central nervous tissue with characteristic neuroglia cells and fibres. It could not be positively stated that ganglion cells were present; however, cells with protoplasmic prolongations resembling early embryonal ganglion cells were found, also central channel-like formations and papillary excrescences which simulate plexus choroideus. These structures exclude the supposition that the growth was developed from the normal tissues of the thyroid region. It is undoubtedly a true embryoma and, therefore, we must consider the same pathogensis for it as for other embryomata. In this respect it is probable that it has developed from a separated division cell of the ovum. This separation was effected at a very early stage of embryonal life while the embryonal cells had an intense germinating power. It is interesting to note that the case of Poult and two of the other five cases cited by him contained fetal brain tissue. It appears that brain formations play a conspicuous role in the formation of embryoma. I would, for instance, call attention to the newly published work of Nakayoma, *Ueber kongenitale Sacraltumoren,* from this institute. He found central nervous tissue in all of his thirteen cases.

In a therapeutical direction it would have been possible in my case to have extirpated the thyroid growth, but the feeble condition of the patient on admittance to the hospital made such interference impracticable.

I wish to acknowledge my indebtedness to Prof. Chiari for the privilege of reporting the case, also for many valuable suggestions.

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CHRONIC PROGRESSIVE SOFTENING OF THE BRAIN: REPORT OF CASES, WITH AUTOPSIES SIMULATING CEREBRAL TUMOR.[1]

BY J. RAMSAY HUNT, M.D.,

OF NEW YORK,

CHIEF OF THE NEUROLOGICAL CLINIC AND INSTRUCTOR IN NERVOUS DISEASES IN THE CORNELL UNIVERSITY MEDICAL COLLEGE, NEUROLOGIST TO THE CITY HOSPITAL, ASSISTANT PHYSICIAN TO THE MONTEFIORE HOME.

WERNICKE, in his *Lehrbuch der Gehirnkrankheiten,* published in 1881, describes a form of chronic progressive softening of the

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[1] Read at a meeting of the New York Neurological Society, April, 1906.